

2nd and 3rd ECHO was also significant ($p=0.008$). After median follow up of 18 months Cardiac toxicity seen in 30% of Her2 positive breast cancer patients treated with trastuzumab, and was reversible in 90% of the cases. Patients who accomplished one year of adjuvant trastuzumab had significantly higher risk for cardiotoxicity than patients received shorter duration ($p=0.001$).

Conclusion(s): The following factors had significant impact on cardiotoxicity prediction: Post-menopausal status, history of cardiac disease and EF decline more than 10% after 3rd cycle of trastuzumab treatment.

Evaluation of cumulative dose of trastuzumab should be evaluated in subsequent trials.

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The Effect of Progesterone Receptor Expression Level to Predict Prognosis of Estrogen Receptor Positive/ HER2 Negative Young Breast Cancer: A Single-Center Prospective Cohort Study

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Goals: Hormone receptor (HR) status which is composed of estrogen receptor (ER) and progesterone receptor (PR) status correlates response to endocrine therapy in breast cancer. Although ER expression levels affect the prognosis of breast cancer, there are not enough studies about PR expression levels especially in young breast cancer. We compared Clinical characteristics and prognosis according to PR expression level in invasive breast cancer patients.

Methods: A prospective cohort study has been conducted to identify young breast cancer patients with invasive carcinoma and diagnosed less than 40 years old or diagnosed during pregnancy or within postpartum 1 year between 2013 and 2018. We investigated the clinicopathologic features of the patients with ER positive and HER2 negative patients and high-PR (group I), low-PR (group II), and PR-negative (group III) which was stratified PR levels as positive cell proportion over 10%, 1~10% and below 1%. Statistical analysis was executed using SAS version 9.4 (SAS Institute, Cary, NC).

Results: Among the 458 patients enrolled in this study, 386 (84.3%), 26 (5.7%), and 46 (10.0%) were categorized as group I, II, and III, respectively. Median F/U duration was 58.6 months. Compared group I, patients in group II and III were more likely to have high Ki-67 and high nuclear grade. Even though there was no significant difference in the number of patients who received chemotherapy and radiation therapy out of 3 groups, group III received endocrine therapy the least, and group II and III received more neoadjuvant chemotherapy than group I. In terms of DFS ($p=0.033$) and DMFS ($p=0.007$), group II (69.2%, 73.1%) was associated with an increased risk of recurrence and distant metastasis compared with group I (86.5%, 90.4%) and group III (73.9%, 78.3%). Group II had even more risk of recurrence and distant metastasis than group III. There was a significant difference in OS ($p=0.000$) between group I (97.4%) and II(92.30%), even if both are PR-positive groups.

Conclusion(s): PR expression levels affect the prognosis of young breast cancer. Especially prognosis of low-PR breast cancer patients is more likely to PR-negative breast cancer patients than high-PR breast cancer patients. The level of PR expression is necessary to estimate the prognosis in young breast cancer.

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Postpartum breast cancer diagnosed within 10 years of last childbirth is a prognostic factor for distant metastasis – analysis of lymphovascular invasion relating factors

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Goals: Postpartum breast cancer (PPBC) has an increased risk for metastasis and death. Immunosuppression, lymphangiogenesis and lymphovascular invasion (LVI) may relate to the aggressive phenotype of PPBC. Some reports define PPBC as BC diagnosed within 5 years of last childbirth. LVI is a prognostic factor of BC. It is still not well-known what factors affect LVI and prognosis.

Objective: To identify clinicopathological factors related to LVI. To identify factors that influence prognosis among patients with LVI.

Methods: Female patients with stage I-III primary BC who underwent surgery at our hospital from Jan 2009 to Dec 2011 were included. The patients were divided into two groups based on the neoadjuvant chemotherapy (NAC). 1038 patients received NAC while 457 patients received surgery first. Pathological factors were determined using surgical specimens. The correlation between LVI (ly- to ly++++ as ranking scale) and the 26 factors was tested by Spearman correlation analysis. Prognosis on distant DFS was analyzed by Cox regression model.

Results: We observed ly- 746, ly+ 130, ly++ 79, ly+++ 69, ly++++ 17 cases among NAC group, whereas ly- 313, ly+ 69, ly++ 26, ly+++ 41, ly++++ 7 cases among surgery-first group. The NAC group analysis showed that higher LVI correlated to age ($r=-0.21$, $p<0.001$), and lymph node metastasis (LNMets) ($r=0.21$, $p<0.001$), and treatment response (CR, PR vs. SD, PD) ($r=0.22$, $p<0.001$), invasive micropapillary carcinoma (IMPCa) component ($r=0.25$, $p<0.001$), and PPBC< 10 years ($r=-0.26$, $p<0.001$).

Among surgery-first group, LVI was associated with tumor size ($r=0.25$, $p<0.001$), LNMets ($r=0.28$, $p<0.001$), IMPCa component ($r=0.24$, $p<0.001$), PPBC< 10 years ($r=-0.13$, $p<0.001$). Number of pregnancies, childbirths, and breast feeding did not have association to LVI.

PPBC<10y (HR 0.50, $p=0.008$) and LVI (HR 1.67, $p=0.026$) were independent poor prognostic factors of distant DFS but age and menopausal status were not in NAC group. In surgery-first group, LNMets (HR 2.96, $p=0.006$), ER (HR 0.23, $p<0.001$), inflammatory BC (HR 8.13, $p=0.006$) and adipose tissue invasion (HR 27.24, $p<0.001$) were associated with poor distant DFS.

Conclusion(s): PPBC<10y was correlated with higher LVI and poor distant DFS, suggesting that postpartum changes may be related to the aggressive phenotype. The poor prognosis was observed not only in PPBC<5y but also PPBC 5y = <, <10y, suggesting that the impact of postpartum changes may affect longer than expected.

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